CHANGE AND INNOVATION AT THE CANADA SCHOOL: AN INVESTIGATION INTO THE ANTECEDENTS OF ORGANIZATIONAL AMBIDEXTERITY

By

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Abstract

This case study examines the antecedents present in the transformation of the Canada School from its founding to its present state characterized by structural ambidexterity. It provides insights into how an organization's history affects the development of a shared value and belief system focused on continuously searching for new innovations, seizing upon them, and reconfiguring organizational assets to capitalize upon them. Through the use of a single case, the history of the Canada School is traced through five stages of growth.

The Canada School was founded in order to deliver education to children with learning difficulties. This school was one of the first of its kind to be developed specifically for children with these challenges. In the beginning stages, the Canada School was forced to constantly move from location to location, culminating in its near closure. Because of an explicit decision to survive and grow, the senior leaders and employees of the Canada School developed a shared system of values and beliefs that led to a constant need to develop incremental innovations (exploitation) along with radical innovations (exploration). This need ultimately led the Canada School to adopt structural ambidexterity.

This research finds evidence concurrent with hypotheses in ambidexterity research, including that (1) structural ambidexterity is superior to contextual ambidexterity in the simultaneous pursuit of exploration and exploitation; (2) inter-organizational relationships can act as a conduit of new knowledge that enhances an organization's ability to innovate; and (3) organizational history deeply affects and influences the beliefs and values of an organization, including management cognition as it relates to balancing exploration and exploitation activities.

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1 Introduction

Innovation is the centre of economic change, creating gales of creative destruction that lead to mutations in economic structures and processes (Schumpeter 1942). It is necessary for organizations to search out this destructive change and pre-empt it, before the response degenerates into reactionary measures. It is not sufficient, however, for an organization to solely search for these revolutionary new innovations to the neglect of incremental changes to its current revenue-generating activities. In order to balance both priorities, an organization must adopt an ambidextrous orientation.

A defining characteristic of management strategy is the idea that competitive advantage determines firm success (Porter 1979). The ways in which an organization attains and maintains competitive advantage in the face of change, however, has long been disputed (i.e.: Teece et al. 1997; Hannan & Freeman 1977; Tushman & O'Reilly 1996).

Organizational ambidexterity (OA) takes its meaning from the ability to use both hands with equal dexterity. Applied to organizations, it refers to the ability of senior managers to both exploit their current revenue-generating activities, while at the same time explore for new and innovative ways to maintain competitive advantage. OA is a framework that instructs researchers and practitioners in how to lead organizations into actionable steps towards managing both short-term and long-term growth, both of which are key to organizational survival. The literature on dynamic capabilities (Teece et al. 1997) provides a theoretical framework for understanding why this is important, but does not provide any clear process of strategic implementation. Senior leaders that possess dynamic capabilities play an important role in an organization's ability to develop and implement organizational

ambidexterity, as it allows them to continuously sense new opportunities, seize them, and reconfigure assets to exploit them (Teece et al. 1997; O'Reilly & Tushman 2008).

Ambidexterity describes how an organization can balance exploration and exploitation. Exploration and exploitation initiatives "compete for scarce recourses" and senior leaders must make explicit and implicit decisions around the allocation of those resources (March 1991, p.71). Tushman and O'Reilly (1996) contend that in order to balance the exploitive nature of short-term innovation and the explorative need for revolutionary change, management cognition and specific organizational structures are essential. Physically separating the exploration unit from the exploitation unit is called structural ambidexterity; conversely, contextual ambidexterity relies on a shared belief and value system that is present throughout the organization (McCarthy & Gordon 2011; O'Reilly & Tushman 2013; Gibson & Birkinshaw 2004).

Mainstream research focuses on the positive effect of OA in for-profit industries, such as semiconductors (O'Reilly & Tushman 2008), consumer products (Tushman & O'Reilly 1996), manufacturing (He & Wong 2004), service firms (Geerts et al. 2010), and supply chain vendors (Im & Rai 2013). In contrast, examinations of how OA can positively affect innovation, change, and growth in not-for-profit (NFP) organizations, particularly in Canada are under-researched. Canada has the second largest NFP sector in the world, employing over two million people, or 11.1% of the active population (Imagine Canada 2014). The Canadian NFP industry contributes $106 billion, or 8.1% of GDP – larger than the automotive or manufacturing industries (Imagine Canada 2014). Evidently, this is a very large industry that is becoming more competitive as NFP organizations slowly realize the need to shift towards a market orientation (Choi 2012).

The empirical research presented here examines a non-profit, educational organization in Western Canada, "Canada School (CS)," that engaged in a process of organizational restructuring for the purposes of increasing its innovation capabilities. The need for innovation was in response to the need to address the emergence of new technologies and a rapidly changing market environment. CS understood that incremental innovations would not be enough and focused on developing a balanced approach to searching for radical innovations while continuing to focus on incremental innovations.

CS was born into uncertainty, with the organization having to move locations several times in its early history. At one point, CS had to make an explicit decision whether to cease operations or make radical changes that would ensure its long-run survival. This uncertainty forced CS's senior leadership team to search for new growth opportunities; the constant need for searching led to the development of dynamic capabilities, which, in turn, led to the development of an ambidextrous organization. After attempting to create a contextual ambidextrous environment, CS eventually physically separated the exploration and exploitation units and adopted structural ambidexterity. This separation led to increased innovation capabilities.

The Canada School is a unique non-profit in several ways. The organization's founding members included parents of children with learning difficulties, and it was these parents who determined the need for such a school. Before the Canada School was founded, children with learning difficulties were forced to seek help through the provincial school system, which was not sufficiently prepared to deliver comprehensive, specialized curriculums to these students (Interview with George). Prior to starting the Canada School, the founders who had children with learning difficulties flew their children to the eastern United States in order to

provide their kids the help they needed. Realizing that this was not feasible for the majority of Canadians, specifically in the province in which the founders resided, was a key driver behind the development of CS (Interview with George).

When CS was finally formed, it went through in an initial period that culminated in the school nearly going bankrupt. At this point, the founders and staff made an explicit decision to stay open. It was also at this point that the senior leaders of the organization made a decision to never have to rely on outside funding in order to keep the doors open (Interview with George; Interview with Jerry). From this moment forward, the senior leaders of the Canada School prided themselves on having strong cash assets (Interview with Jerry). In order to accomplish this, CS had to operate more like a for-profit organization than a non-profit organization by aggressively pursuing revenue-generating activities. This is evident in CS's pursuit of different revenue streams in the later stages of its growth.

Finally, CS is unique in that the demand for their services grew over time. Originally geared towards teaching children with learning difficulties, demand quickly grew for CS to deliver education to children without learning difficulties (Interview with Jerry). This demand led to a new school (which operated in the same physical location) aimed at children without learning difficulties. This new school, the "Collegiate," was at first primarily made up of students who had previously overcome their learning difficulties, and whose parents wanted them to remain in the CS environment. Later on, the Collegiate would take in students who had no prior history of learning difficulties.

This research contributes to the understanding of how and why an organization comes to adopt organizational ambidexterity. Specifically, this project investigates the role that senior leadership cognition, organizational histories, and organizational structure have in the

development of an effective ambidextrous organization. To do so, this project traces the antecedents to ambidexterity using case study methodology, exploring the evolution of the Canada School towards structural ambidexterity.

The project is structured as follows. Section one provides an introduction to the theories, methodology, and the organization under investigation. Section two presents a review of the current literature. Section three describes the methodology used to gather pertinent data. In section four, a background to the organization is presented and the data gathered from the research are used to create five stages of growth through which the development of ambidexterity is traced. Section five provides a discussion of the data and a conclusion is drawn in section six. Section seven addresses the implications this research has on industry and section eight describes areas requiring further research.

2 Theoretical Background

Balancing the competing priorities of exploration and exploitation is a difficult task, yet it is imperative for effective innovation activities. The literature reviewed here spans theoretical and empirical research. Gaps between contextual ambidexterity and exploitation/exploration learning theories are discussed, in addition to how organizational history leads to a particular management cognition.

Analyzing the theoretical background begins with tracing the roots of the term from Duncan (1976) up to the most current literature on the topic. Next, antecedents to ambidexterity are discussed, including those related to structure, context, and leadership. The the role of learning and knowledge is analyzed, followed by the final two areas of the section, which

explore the role of inter-organizational relationships and absorptive capacity. Finally, the section concludes with general observations from the literature.

2.1 Ambidexterity

Several authors have proven the effects of ambidexterity on increased firm performance (i.e.: Geerts et al. 2010; O'Reilly & Tushman 2013; Auh & Menguc 2005). For example, based on a longitudinal study, Geerts, Blinbach-Driessen, and Gemmel (2010) found that firms in both service and manufacturing industries benefit from ambidextrous organizational structures. Additionally, Tushman et al. (2010) identify that as firms adopt a more ambidextrous organizational model, innovation outcomes are increased. Conversely, they found that as firms move away from organizational ambidexterity, innovation outcomes decrease.

Much of the literature on OA states that management cognition is a key requirement for any successful OA endeavour (Gibson & Birkinshaw 2004; Raisch et al. 2009; Lubatkin et al. 2006; He & Wong 2004; Tushman & O'Reilly 1996). Although it is widely accepted that a successful ambidextrous orientation requires strong leadership, O'Reilly and Tushman (2013) note that little has been done to explain exactly *how* leaders manage the dichotomy of exploitation and exploration (p.332). Some specifics that we do know include, for example, that transactional leadership is more akin to exploitation whereas transformational leadership accentuates exploration activities (O'Reilly & Tushman 2013). Therefore, this research addresses gaps in the literature through generating practical insights into how leadership cognition and organizational history acted as antecedents to organizational ambidexterity.

The mainstream literature on organizational strategy contends that an organization is able to focus on either efficiency and cost leadership (i.e.: exploitation) or differentiation (i.e.: exploration), but not both (Porter 1980). Ambidexterity offers a solution to this problem by explaining how an organization can balance and pursue exploitation and exploration at the same time. Authors are inconsistent in their definition of ambidexterity, exploration, and exploitation, with different writers defining these three terms in slightly different ways (Gupta et al. 2006). Robert Duncan (1976) first used the terms exploration and exploitation to describe a way in which an organization can manage competing priorities by physically separating organizational units into "dual structures." Gibson & Birkinshaw (2004, p.209), building on Duncan and incorporating Tushman and O'Reilly (1996), define the ambidextrous organization as one that is "aligned and efficient in… [the]management of today's business demands, while also adaptive enough to changes in the environment that they will still be around tomorrow." Thus, the key goal of an ambidextrous organization is to find the right balance between exploitation and exploration (March 1991; Auh & Menguc 2005). March (1991) defines exploration and exploitation as two different methods of learning, with exploitation related to incremental improvements and exploration related to radical new ideas. As this is the most common understanding, it is the one that is used in this project.

Exploitation is concerned with refining existing competencies through incremental changes and is positively correlated with increased operational efficiencies (Auh & Menguc 2005; Tushman et al. 2010). It is characterised by "tight controls, structures, culture and discipline processes" (Tushman et al. 2010, p.1335). March (1991, pg. 85) describes the essence of exploitation as "the refinement and extension of existing competencies, technologies, and

paradigms. Its returns are positive, proximate, and predictable," and because of the predictable nature of its returns, most organizations tend to engage in exploitation over exploration activities.

Exploration activities lead to revolutionary changes and innovations. Revolutionary change can be the result of competence destroying technological shifts; it is innovation away from the firm's current technology or market origin (Tushman et al. 2010; Auh & Menguc 2005). Exploration outcomes challenge existing capabilities with the goal of finding and developing new ones (Auh & Menguc 2005; Tushman et al. 2010). Often times, the objectives and results of exploitation are competence destroying and may not match up to short-term goals (March 1991). Exploitation and exploration are not the opposite of each other. Instead, they should be viewed as being on either end of a shared continuum (Auh & Menguc 2005). O'Reilly & Tushman (2008) assert that by finding the right balance between exploration and exploitation, organizations can successfully evolve, change, innovate, and maintain competitive advantage. If the balance is off, however, the results can be detrimental. Over-reliance on exploitation can lead to a "success" or "competency trap," where focus is maintained on short-term profitability because the results of which are more certain (March 1991; Auh & Menguc 2005). In contrast, overreliance on exploration can result in a "failure trap," where a constant re-alignment of strategy prevents any expertise from being formed within the organization (O'Reilly & Tushman 2008).

Balancing exploration and exploitation can be done in two ways. An organization can either create a system of shared values and beliefs, facilitating a contextual ambidextrous organization, or it can physically separate the exploitation and exploration units, leading to a structural ambidextrous organization. There are other important antecedents to

ambidexterity, including inter-organizational relationships, absorptive capacity, and learning and knowledge management strategies within the firm. The following sections present these antecedents and concludes that there is a gap between what we know about contextual ambidexterity and how knowledge and learning are thought to affect exploration and exploitation activities. Additionally, questions are raised about the potential role that inter-organizational relationships can play in offsetting the homogenous nature of knowledge developed under a contextual ambidextrous system.

2.2 Antecedents to Ambidexterity

Determining what is needed for a firm to adopt ambidexterity is one of the most difficult questions within the literature. Raisch and Birkinshaw (2008) assert that there are three antecedents to ambidexterity: organizational structure, organizational context, and senior leadership cognition, and argue that these antecedents play different roles depending on whether the type of ambidexterity practiced within an organization is structural or contextual. The theoretical background of these three antecedents are discussed in the following sections.

2.2.1 Structural Antecedents

Structural separation is the most prevalent antecedent to ambidexterity in the literature. The authors argue that the most effective way to simultaneously exploit a firm's current market position and explore new opportunities is to physically separate the organization's exploration and exploitation activities into autonomous structural units (O'Reilly & Tushman 2013; He & Wong 2004; Tushman & O'Reilly 1996; Tushman et al. 2010). These units are encouraged to develop their own systems, competencies, incentives, processes, and cultures (O'Reilly & Tushman 2013). Structural ambidexterity requires a strong leadership

team that can manage the tensions arising between the separate units vying for resources, and can articulate a strong vision that legitimizes the organizational need for both exploration and exploitation processes (O'Reilly & Tushman 2013). Benner & Tushman (2003) reinforce this requirement based on their findings that direct control over processes and a high degree of oversight inhibits effective exploratory capabilities while, concurrently, encouraging exploitative capabilities.

The degree of autonomy provided to the exploration sub-unit, and whether or not autonomy is needed for innovation is contested in the literature. It has been argued that innovation activities can be effectively delivered under conditions of oversight and standard operating procedures, thereby denying the need to have structurally separate units. For example, Becker and Zirpoli (2009) argue that stability is a prerequisite for successful innovation campaigns and that it enhances exploration and exploitation activities. They assert that stability must come in the form of set "innovation routines," which enable the organization to continuously practice innovation by setting guidelines for specific innovation activities. For example, they describe brainstorming sessions at an innovation-centered organization as innovation routines that were required to initiate the innovation process, and occurred regularly at the start of each innovation project. In this manner, the innovation-centred organization routinized and regulated its innovation processes. Zollo & Winter (2002) support this in arguing that routines related to common and uncommon tasks should be codified in organizational knowledge.

Tushman et al. (2010) argue that the most successful structurally separate firms are "composed of an interrelated set of competencies, cultures, incentives, and senior team roles" (p.1333). In this way, ambidextrous organizations are composed of many different

sub-units, which are loosely integrated through senior management teams. Tushman's (2010) study on ambidexterity and organizational structures (see Figure 1) found that it is crucial to have a senior leadership team oversee both the exploration and exploitation units, thereby providing the capability to (re)integrate any knowledge gains between the two.

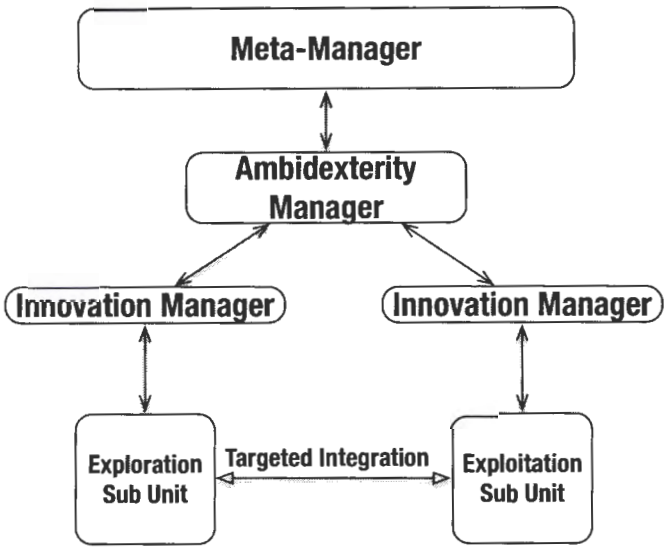

FIGURE 1: STRUCTURAL SEPARATION BASED ON TUSHMAN ET AL. (2010)

As is evident in Figure 1, typical exploration and exploitation sub-units both have separate innovation managers, who then report into the same ambidexterity manager. In most cases, the ambidexterity manager is the general manager or CEO. In cases where the firm is part of a large conglomerate, the ambidexterity manager may report into a more senior "meta-manager" of the corporation. In addition, knowledge is allowed to flow between the exploration and exploitation sub-unit through targeted integration. To illustrate this, Tushman et al. (2010) describe that even though USAToday's digital operations, USAToday.com (exploration), was structurally separate from the USAToday newspaper

operations (exploitation), the editorial team consisted of editors from both units, and were able to leverage and disseminate content developed in either medium.

The benefits of structural ambidexterity lie in the ability to have two different value and belief systems under one organization. Structural ambidexterity allows different types of knowledge to be harnessed in the same organization, thereby allowing for the simultaneous pursuit of exploration and exploitation activities. By pursuing exploration and exploitation simultaneously, an organization can be prepared for changes in the market place. This is especially useful in industries where technological change happens relatively rapidly. Where structural ambidexterity can fall short is its overall efficacy in small organizations, simply because of added costs associated with supporting two separate research units. An alternative to structural ambidexterity that purports to reduce those costs is contextual ambidexterity, which is discussed in the next section.

2.2.2 Contextual Antecedents

Im and Rai (2013, p.74) identify contextual ambidexterity as focusing on managing an organization's culture, processes, and routines to achieve synergy between alignment and adaptation. Proponents of contextual ambidexterity (i.e.: McCarthy & Gordon 2011; Gibson & Birkinshaw 2004; Lavikka et al. 2015; Adler et al. 1999) argue that organizing for structural dexterity requires expending significant organizational resources that may not realize its goal of promoting innovation-focused thinking to the entire organization.

Contextual ambidexterity is a micro view of how ambidextrous organizations operate. Gibson & Birkinshaw (2004) argue that there is no neeed to structurally separate units. Rather, they assert, ambidexterity can be embedded within the individuals that make up an organization. The concept of contextual ambidexterity is viewed as being dependent on

organizational *context* and the support for innovation practices is provided by business-unit leaders. Gibson and Birkinshaw (2004, p. 211) argue that contextual ambidextrous organizations allow for ambidexterity to "manifest itself in the specific actions of individuals throughout the organization." Within the organizational context, each individual in an organizational unit has the capacity to deliver value while being vigilant for new innovations and is empowered to choose when to pursue exploitation or exploration (Gibson & Birkinshaw 2004). McCarthy and Gordon (2011) support this perspective in stating that merely creating a separate unit for R&D does not in and of itself constitute ambidexterity. They assert that, although the location in which research is undertaken can be distinguished from other parts of the firm – such as sales, accounting, and marketing – the question of ambidexterity must still be addressed within the research unit itself.

Adler et al. (1999) contend that, although a contextual ambidextrous firm can attain a balance between exploration and exploitation by either simultaneously pursuing exploration and exploitation activities or by switching between the two (known as *sequential ambidexterity*), the sequential approach yields the greatest results. Additionally, Brown & Eisenhardt (1997) note that through "rhythmic" switching, exploitation and exploration activities can occur in the same organization under contextual ambidexterity, and that this method is preferred when simultaneously pursuing exploration and exploitation.

What determines this "switching" is still unclear. As O'Reilly & Tushman (2013) argue, sequential ambidexterity could be nothing more than a punctuated equilibrium model of change, which posits that organizations are generally in a state of inertial equilibrium, which is then disrupted by periods of rapid change (Gersick 1991). These periods of rapid change are usually brought on by strong forces acting on the organization, such as severe

performance crises, leadership transitions, and major shifts in the organization's environment (Romanelli & Tushman 1994). Even if there are small, incremental changes within an organization, these do not typically bring about revolutionary change (Romanelli & Tushman 1994). In other words, this could not ambidexterity at all.

Although this is an arguably important aspect to any innovative organization – that individual employees are always on the lookout for new ways of doing things – contextual ambidexterity does not address the challenges an organization can face in focusing on and developing new, revolutionary revenue-generating ideas, be they new products, services, or business models. The fact that contextual ambidexterity lends itself more towards sequentially pursuing exploration and exploitation negates the entire purpose for what ambidexterity aims to do: properly balance the simultaneous pursuit of radical innovations with the continued growth of current revenue-generating activities through incremental changes.

Whether pursuing contextual or structural ambidexterity, the discussion around a strong and committed senior leadership team is not a point of contention (i.e.: O'Reilly & Tushman 2013; Tushman et al. 2010; He & Wong 2004). Senior leadership cognition is a key aspect in the successful performance of ambidextrous organizations. These senior leaders provide "symbolic support" to both exploration and exploitation activities (Tushman et al. 2010, p.1346). It is important to explore this antecedent to ambidexterity in more detail and so the next section will be dedicated to investigating senior leadership cognition as it relates to organizational ambidexterity.

2.2.3 Leadership Cognition

Lavie (2006) and Tripsas and Gavetti (2000) assert that the ability to reconfigure an organization's assets in response to changing market dynamics is dependant on senior management's cognition of the world around them and, because existing firm resources (senior management) have a direct affect on the capabilities of an organization, the ability to innovate and change is largely path dependent. Tripsas & Gavetti's (2000) study of the Polaroid Corporation's response to technological innovation in imaging, illustrates the importance of leadership cognition. They found that although Polaroid was able to develop new technological knowledge to create digital imaging innovations, they were unable to capitalize on the new products that they had developed. Tripsas & Gavetti (2000) attributed this failure to the senior leadership's inability to innovate on Polaroid's core business model. In effect, senior leadership at Polaroid could not move away from the razor/blade model of film and camera, to a hardware-based, camera-only model because they had been in senior leadership positions for too long; what was once a core capability became a core rigidity due to the path dependent nature of Polaroid's evolution. Thus, even though the organization was able to innovate, senior leadership cognition did not allow the firm to capitalize on the resulting products.

Similarly, Beckman (2006) found that the composition of founding members plays an important role in a firm's ability to practice exploration and exploitation. A founding team, for example, sharing a common background results in the firm being more focused on exploitation, whereas founders coming from a divergent background, are more likely to encourage exploration. A mix of backgrounds allows a firm to engage in both exploration and exploitation.

Leadership cognition plays an important role in an organization's ability to innovate and change. As the Polaroid example demonstrates, even though new innovations can be produced, capitalizing on them requires senior leadership's full commitment to the new, competence-destroying innovations. Levinthal & March (1993) concur that it is much harder for senior leadership to get behind radical innovations, as firms are predisposed to using exploitation strategies rather than exploration strategies, due to the relatively low risk of exploitation activities and their ability to provide rapid feedback.

2.3 Ambidexterity, Learning, and Knowledge

March (1991) argues that organizations inevitably make implicit and explicit trade-offs between exploration and exploitation, and that a balance between the two is key. He asserts that explicit decisions are calculated and involve distinct evaluations about specific alternatives, resulting in an exact decision, while implicit decisions are more granular and involve organizational customs, unwritten rules, incentive systems, and search procedures. Consequently, the organizational environment determines the nature and extent of implicit and/or explicit decision making and, given this, organizational learning and knowledge play an important role.

March's (1991) seminal work on exploration and exploitation addresses the role that organizational learning and knowledge have on developing radical and incremental innovations. Depending on what kind of innovation an organization is after will determine the human resources needed. If radical innovations are sought, then an organization should hire employees with disparate backgrounds and not force them to adapt to the organizational culture. The opposite is true if the goal is incremental innovations. In order to balance both exploration and exploitation, then, an organization needs to balance the type of employees it

hires, as the employees contribute knowledge to the firm. March's work is the basis of most subsequent research on ambidexterity and therefore it is important to take a moment to understand his concepts.

2.3.1 Knowledge

March (1991) argues that organizational knowledge is stored in procedures, norms, rules, and forms. Individuals accumulate knowledge from others in the organization. Over time, as employees continually reaffirm organizational knowledge, organizational beliefs become socialized into a "code." As the code and individual's knowledge become more and more aligned, new knowledge (which would result in a variance to performance – in other words, exploration) become more difficult to achieve. The amount of turnover and the degree and speed of which new employees learn the code has a direct effect on the degrees of exploration and exploitation within an organization (see Figure 2).

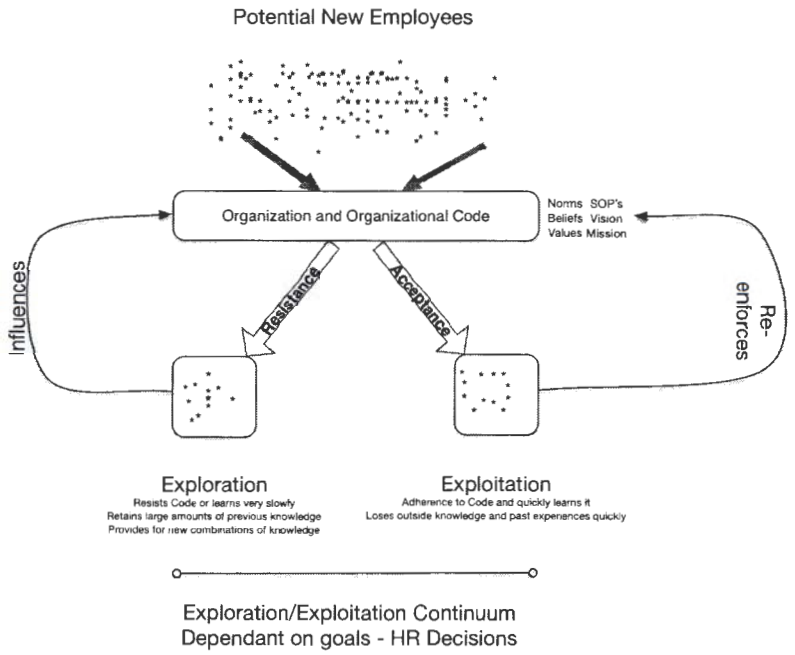

FIGURE 2: VISUAL REPRESENTATION OF MARCH'S (1991) EXPLORATION AND EXPLOITATION KNOWLEDGE FLOWS (AUTHOR'S INTERPRETATION)

Figure 2 is a visual representation and interpretation of March's theory of knowledge flow in an organization. There is a base of potential new employees that a firm can hire. When a firm hires new people, these people either learn and adhere to the code or they resist it. If new employees learn the code rapidly, then they are able to quickly contribute to the firm's current revenue-generating activities. If new employees do not learn the code quickly, then they are less useful in the short term; in the long term these employees will help deliver radical changes to the organization through influencing the organizational code with the outside knowledge that they have retained. Those employees that end up contributing to exploitation also influence the code, but in a way that reinforces it. Therefore, focusing on exploitation will result in a competency trap and core rigidities whereas focusing on exploration will continuously change the organizational code, leading to a lack of expertise in any specific area. Thus, a balance between the two is key.

2.3.2 Learning

March (1991) finds that slower rates of learning lead to greater exploration abilities, as they allow the individual to keep some of his "deviant" ideas, which then affect the code itself. This keeps diversity alive longer. Alternatively, faster learning of the code results in a stronger ability to more quickly execute the firm's current processes – in other words, exploitation. It is important, then, to have a good balance between fast and slow learning abilities in new hires in order to keep exploitation and exploration capabilities equal (or to the desired level). In other words, when individuals come quickly to accept "the way we do things around here," the less of an effect that individual will have on finding "new ways of doing things," but the greater effect that individual will have on incremental, short-term gains. Individuals who are slow to adopt to organizational norms will not be as useful in the

short term because their lack of knowledge leaves them less capable. These individuals, however, are needed to bring about ideas of long-term innovation and change.

Exploration is vulnerable to the positive feedback loop created by exploitation activities. As managers undertake short-term rent seeking, emphasis will be placed on exploitation of the firm's current capabilities. Since exploitation results in immediate feedback and the ability to quickly adjust practices to reap rewards, its effects on decision making re-affirm itself through this positive feedback. The results are path dependencies and core rigidities. Thus, the knowledge related to exploitation initiatives becomes stronger, thereby increasing the likeliness of more exploitation initiatives in substitution of exploration initiatives. Managing the degree, speed, and competences of knowledge within individuals in an organization is needed to prevent the negative effects of too much exploitation.

It is important to understand the relationship between knowledge flow and ambidexterity because, as mentioned above, this work is what most of the ambidexterity literature is based upon. If we take March's view of exploration and exploitation, then it necessarily leads us to question the efficacy of contextual ambidexterity as a viable alternative to structural ambidexterity. This is a major gap discovered in the theoretical foundations of ambidexterity, but a full discussion of this paradox is out of scope of this project. It does, however, warrant some further attention.

Contextual ambidexterity requires the organizational unit to have shared values, beliefs, and understandings in order to create a context in which both exploration and exploitation can be conducted by the same individual(s). In terms of March's research, this means that in a contextual ambidextrous organization, employees must learn the organizational "code" in order to be effective at both exploration and exploitation.

Figure 3 visually represents where contextual ambidexterity will run into issues. If individuals in a contextual ambidextrous organization need to adhere to a common belief system, then it does not allow for new knowledge to alter the organizational code; the employees in the ambidextrous organization will simply reaffirm the code, which will lead to competency traps and core rigidities. It is exactly these types of people, according to March (1991) that are required for exploitation.

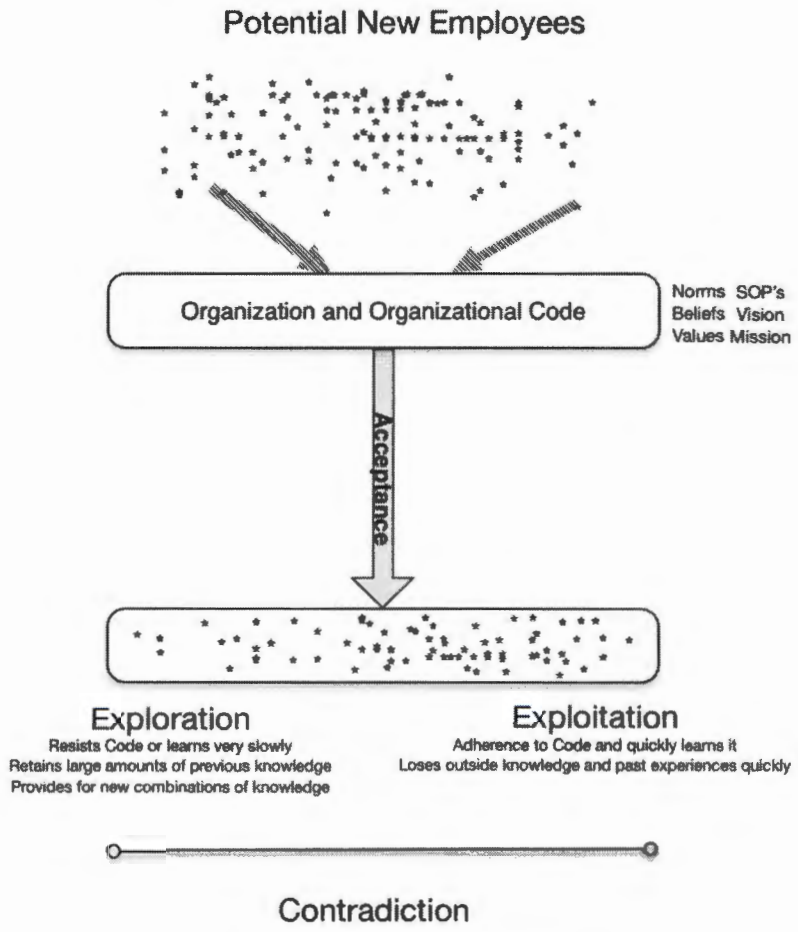

FIGURE 3: VISUAL REPRESENTATION OF CONTEXTUAL AMBIDEXTROUS KNOWLEDGE FLOW IN TERMS OF MARCH (1991) (AUTHOR'S INTERPRETATION AND RENDITION)

Even if those individuals are able to develop a revolutionary innovation, the path towards that specific innovation will not encompass the same amount of variation of ideation as would come out of a team comprised of various beliefs and values. In other words, if effective ambidexterity requires two sets of employees with different knowledge sets and rates of learning, then it is difficult to understand how a contextual ambidextrous organization could be capable of developing radical innovations that move away from a firm's current capabilities. Therefore, the only way contextual ambidexterity could be remotely valuable is if it is practiced sequentially (which, presented earlier, might not even be ambidexterity at all). Even so, when the cycle is at exploration, it is the same knowledge base that would be used to pursue exploitation – which, according to March, is the wrong knowledge base for exploration activities.

2.4 Absorptive Capacity

Absorptive capacity (ACAP) describes the ability of an organization to search for, assimilate, and use new knowledge (Cohen & Levinthal 1990). Because much of the new knowledge required for innovation comes from outside the firm, ACAP can be influenced by the level of inter-organizational relationships (Zahra & George 2002),

Zahara and George (2002) identify two dimensions related to absorptive capacity: potential ACAP (PACAP) and realized ACAP (RACAP). PACAP is the organization's "receptiveness" to acquiring and using new knowledge from external sources while RACAP describes the ability of an organization to actually "transform" that knowledge into innovations. They assert that it is much more likely for an organization to have a high level of overall ACAP if that organization has previous experience or knowledge in the areas in which they are attempting to develop innovations. This is because the search for new

knowledge is usually done in areas of an organization's past experiences.

Organizations are therefore more likely to search for incremental innovations than revolutionary ones, for if an organization is looking for competence-destroying innovations, those would be in places where an organization has little experience. Thus, inter-organizational relationships and structural separation can play a key role in getting away from research activities in areas of past experience. If an organization is focused solely on managing existing knowledge, core rigidities will be formed (Leonard-Barton 1992). Therefore, "knowledge flows" between firms are required to continually bring in new ideas (Kang et al. 2007). One way to overcome this challenge is to use inter-organizational relationships, akin to what Chesbrough (2003) calls Open Innovation. Inter-organizational relationships have been found to greatly enhance a firm's innovation ability; the theoretical basis of these relationships will be examined in more depth in the following section.

2.5 Inter-organizational Relationships

The incompatibility described by March (1991) between exploitation and exploration is largely driven by the competition for scarce resources. As Gupta et al. (2006) note, however, resources need not always be scarce. One way in which an organization can turn a resource from finite to infinite is by forming inter-organizational relationships or alliances.

Inter-organizational relationships can increase the effects of ambidexterity. For example, Park et al. (2014) found that there are two general configurations through which an organization can attain and successfully manage ambidexterity. The first is through centralization and strong information technology (IT) structures, and the second is through harnessing inter-firm collaborations. Due to their size, large firms are able to rely on IT

whereas smaller firms, who do not have the capital to invest in such IT structures, must rely on inter-firm collaboration. Even though Park et al. (2014) argue that IT systems can replace strong inter-organizational relationships for the purpose of effective ambidexterity, there is strong evidence to suggest that knowledge transfer across firm boundaries most effectively takes place on the social relationship level (Kang et al. 2007). Heimeriks et al. (2007) assert that alliances help a firm "open up" to the knowledge of outside organizations, helping to overcome an overreliance on exploitation. This is achieved by a process of formal engagements to facilitate the process of "group-level" learning between members of different organizations (Heimeriks et al. 2007).

Social relationships and inter-firm connections facilitate knowledge flow between organizations. This type of new knowledge can act as a substitute for strong IT systems, but can it also act as a substitute for structural ambidexterity? In a contextual ambidextrous organization, what is missing is a source of new knowledge – employees who do not adhere to the code. If a contextual ambidextrous organization fully utilized inter-organizational relationships, then new knowledge gained through these relationships could theoretically offset the closed contextual ambidextrous system. More research is needed on this question, as it is out of scope of this project.

Ambidexterity can have an enormous effect on a firm's ability to innovate and change and it presents a new paradigm for attaining and maintaining competitive advantage. There are several important antecedents to ambidexterity, including leadership cognition, ACAP, knowledge management, and organizational structures and context.

Leadership cognition is a necessary part of any OA transformation because resource allocation is required to balance exploration and exploitation activities. Depending on senior

leadership's cognitive persuasion, resource allocation has the propensity to become skewed to one area of the firm at the expense of another. An organization's history plays an important role in developing leadership cognition. As demonstrated in the case study below, an organization that is born into uncertainty and has to constantly deal with change is more likely to have a leadership team that is devoted to searching for for both exploration and exploitation based innovations.

ACAP is fundamental to an organization's ability to both search for and use new knowledge. Based on the research in this area, it is much more likely that an organization will search for knowledge derived from a familiar base, leading to incremental innovations.

Much of the knowledge and understanding that surrounds ambidexterity is ambiguous in nature. This is especially true when investigating its antecedents, and whether that investigation leads to an acceptance of contextual or structural ambidexterity. Much of this argument can be distilled into finite particles, but fundamentally it has to do with knowledge management. There is a gap between contextual ambidexterity and the way in which knowledge operates within an organization. Contextual ambidexterity does not address the issue of the type of knowledge that is needed for exploration, as all knowledge under a contextual system is based on a shared belief and value system. Exploration activities require employees who both accept and actively resist an organization's shared value and belief system; structural ambidexterity is better positioned to enhance both exploration and exploitation and, as the case study on CS shows, is better suited for increased innovation outputs.

In tracing the path towards ambidexterity at the Canada School, this research examines the role of senior leadership cognition, firm history, and inter-organizational relationships. The

section that follows outlines the methodology used to explore the concepts of ambidexterity at the Canada School.

3 Methodology

This project investigates the antecedents to ambidexterity. To do this, the case study methodology was used in order to do a deep dive into one particular organization's transformation. By looking at the reasons behind why CS decided to adopt an ambidextrous strategy allows for specific models to be built. These models can then be used to look at the current literature on ambidexterity in order to assess current theories.

This section outlines the methodology used to gather data for this project. The section begins by looking at the case study as a research method, followed by a description of the research site, sample composition, other data collection methods, and finishes with a description of data analysis techniques.

3.1 Case Study as a Research Method

> *"Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry" (Denzin & Lincoln 2011, p.8)*

Qualitative research looks beyond the numbers in an attempt to compile a rich and complete understanding of the phenomena under investigation (Lewis et al. 2007). Within the qualitative method, case study research allows investigators to examine specific units of analysis, providing an even more detailed, rich, and complete understanding of an issue (Denzin & Lincoln 2011). In social science and management fields, case studies have been used to explain phenomena in a wide cross-section of topics, and this methodology is an

excellent way of understanding how behaviours and processes both influence and are influenced by context (Cassell & Symon 2004; Chetty 1996).

Case studies have been successfully used for investigating innovation-related questions and are especially useful in small and medium sized organizations (Chetty 1996; Yin et al. 1985). Case study research is more intensive than a cross unit analysis, as it stresses developmental factors and focuses specifically on the context in which the research question is being asked (Denzin & Lincoln 2011).

Flyvbjerg (2006) asserts that case studies are optimal in generalizing scientific claims. He refers specifically to "Black Swan" type cases (p.224). These cases can be used to refute other claims ("falsification") and can therefore generalize that something is not true in all circumstances. To illustrate this, Flyvbjerg uses the example of Galileo's rejection of Aristotle's theory of gravity. By performing one experiment – i.e.: one case – Galileo was able to prove that Aristotle's theory was incorrect, thereby generalizing that the current conception of gravity was false (p.225). In this way, a case can be seen as synonymous to a single experiment used to test a theory and gain further insight into a scientific question. As the case study method is flexible, the research question may shift slightly pursuant to the ongoing investigation and data analysis (Eisenhardt 1989). The case study research method is thus an excellent approach for this project to take, as the primary goal of this research is to examine the theory of ambidexterity in one specific instance.

A clear beginning question and theoretical framework is essential to case study research methodology (Cassell & Symon 2004). This case study is an empirical examination of the theory of ambidexterity and develops insights into how the Canada School restructured itself to ensure its long-term survival. Specifically, it focuses on senior management's role in re-

organizing the firm to best position it for exploration and exploitation activities through structural ambidexterity.

This research follows Eisenhardt's (1989) case-study research process. After the initial research question was formed, the population to be used in the research was selected. This population consisted of mid to senior managers, with tenures ranging from two to 30 years. Additionally, two founding board members were interviewed.

To ensure that the data analysis and data collection phase overlapped, running field notes were used. A field notebook was at hand at all times, and after each interview initial insights were written down and used as investigation points in subsequent interviews. These field notes provided an "on-going stream of consciousness commentary about what is happening in the research," (Eisenhardt 1989, p.539), allowing for an adaptation to questioning and investigative techniques as new information was analyzed.

Data was gathered for the case study through audio recordings and note taking of the subjects' response to questioning. With the exception of two, all interviews were recorded and then transcribed into the program NVivo, which allowed for a comprehensive analysis of the transcripts. This data was then compared against the theoretical framework of organizational ambidexterity. Data tables, models, and interview responses were used to identify gaps in the literature. These gaps led to a contribution of original research to the current literature on ambidexterity.

3.2 Case Study Site

CS is a non-profit education organization focused on delivering kindergarten to grade 12 education for children both with and with out learning difficulties. The organization was

founded in 1981 by a group of concerned parents, some of whom themselves had children with learning difficulties. CS originally operated in rented facilities, forcing the organization to constantly from location to location. These early years of uncertainty were primary drivers behind how the organization eventually developed; it led senior leaders to become obsessed with constantly searching for new ways to sustain the organization's existence.

CS was chosen for three primary reasons. First, the researcher was able to gain complete access to all employee levels of the firm, and having such a level of access allowed for comprehensive data collection. Second, the organization recently underwent a structural shift, specifically to ensure its own long-term survival, by separating research and development from current program management. As such, this presented an excellent opportunity to examine the role of senior management in developing a structural ambidextrous organization. It also allowed for empirical research on ambidexterity antecedents, as the organization's history was easily traceable through legacy employees. Finally, it provided an opportunity to investigate organizational ambidexterity in an environment in which few investigations have taken place: the non-profit educational sector.

3.3 Sample, Interviews and Data Collection

CS contains many employees who have been with the organization since its founding. To choose a sample that would be able to give insight into the organization's history, but also to understand how newer employees view the organization, a purposive cross-section of employment tenures was selected. These tenures ranged from two years to 35 years.

Research began with an orientation interview that was held with a senior manager of the organization. This was important because it enabled the researcher to gain an initial

understanding and overview of the organization's past, present, and future (Cassell & Symon 2004). Proceeding from this, semi-structured interviews were held on site at CS with eight employees. Employees ranged from front-line researchers to senior managers and founding board members. This resulted in a strong data set compiled from a well-rounded cross-section of the organization's employees.

3.3.1 Interviews

Interviewees were selected based on a purposive sample, using an organizational chart provided to the researcher as a guide. Senior management of the organization were consulted to identify other potential participants and to ensure that those selected from the organizational chart were aligned with the research objectives. This led to the addition of the founding board members to the interview roster, which in turn greatly enhanced data collection potential. The final sample consisted of eight participants (six men and two women) ranging from front-line researchers up to members of the Board of Directors. All of these subjects were directly involved in the change process. In addition, the subjects were all involved in the innovation process at some level – whether it was exploitative research, explorative research, or research execution.

TABLE 1: LIST OF INTERVIEW SUBJECTS

Subject	Level	Recording Technique	Length of Interview (minutes)
Jerry	CEO	Audio	90
Elaine	Senior Manger	Audio	30
Bob	Senior Manager	Notes	60
Diane	Manager	Audio	60
Norman	Researcher	Audio	30
Joe	Researcher	Notes	45
George	Board Member	Audio	30
Louis	Board Member	Audio	90

While an interview guide was created to provide consistency across the interviews, deviation from guide was acceptable to encourage the collection of unanticipated data. It was the aim of the researcher to allow each interview to unfold organically. Qualitative interviews were held in a semi-structured manner, allowing the researcher to gain a clear understanding of how and why the interviewee had come to a particular conclusion (Cassell & Symon 2004). Open-ended questions were used along with questions asking for specific examples. To facilitate questioning, an interview guide was developed in consultation with the research supervisor. This guide was used as merely a starting point, and as interviews with participants progressed, questions were changed, altered, added, and deleted. Interview questions were tested in an informal fashion during the initial orientation interview. The interview guide was set up to allow participants to answer open-endedly. If interesting insights, which otherwise was not considered, emerged in interviewee's responses, these insights were pursued further. Similarly, if certain pieces of information were not addressed by the interviewee in an organic manner, the guide was referred to in order to prompt the interviewee in that direction.

All interviews were recorded on digital audio recorders with the exception of two. Given their level of involvement in the change, and the challenges that they faced with it, these two individuals did not feel comfortable with being recorded and in these cases, very detailed notes were compiled.

3.4 Data Analysis

The data analysis followed the procedure proposed by Lewis and Saunders (2007). First, categories into which data was classified, or *coded*, were created. Data was coded into 14 primary categories, outlined in Table 1. Code categories were chosen based on one of two

parameters: either derived from existing theory or developed organically as they appeared during the data analysis stage. Originally, categories were created based on existing theory, but as the interviews progressed, it became clear that data had to be coded into new categories, and some categories had to be eliminated. For example, it was difficult to create data codes specifically under exploitation and exploration headings because these theoretical terms were not used during the interview process. To overcome this challenge, data related to exploitation and exploration were coded into related categories such as "innovation process" and "organizational structures."

TABLE 2: CODE CATEGORIES

Category	Sources
Challenges	6
Communication	2
Growth	5
History w/ Organization	5
Human Resources	2
Innovation Process	5
Inter-Organizational Relationships	5
Management Styles	6
Misc. Quotes	2
Org Structures	3
As Market Leader	2
Reasons for Change	4
Results of Change	2
Strategic Priorities	4

After data classifications had been determined, the researcher transcribed the interviews, saving each as a separate file. When transcription was finished, the researcher analyzed each interview and created a summary. Data was then anonymized and coded into the categories. After codification, data was analyzed for relationships and potential new categories. As the analysis progressed, new categories presented themselves and existing ones required some reorganization. All categories were then compared and contrasted with the literature in order to draw final conclusions.

To summarize, the methodology undertaken in this project was chosen in order to analyze a single case of organizational ambidexterity. Semi structured interviews were used because they allowed for an in depth discussion with research subjects about their experiences, history with the organization, and about how structural change has affected working habits and outputs. CS was chosen primarily because the organization was going through a transformation that was very close to what the literature describes, and secondarily because is is a non-profit organization and studies of organizational ambidexterity in non-profits are scarce. The methodology used resulted in a comprehensive and rich set of data, which were then used to empirically analyze ambidexterity as it worked to shape the future of an organization.

4 The Organization - Background

CS is a non-profit educational institution in Calgary. The school was founded in 1981 by a trio of concerned parents as a place that children with learning difficulties could get the attention they required. At the time the school was founded there was no viable alternative in Canada (Interview with George). The local school boards were not able to give students with

learning difficulties the required attention, and were not trained effectively on how to teach these children. For the parents of these children (those who could afford it), the only other option was to send their kids to a specialized school in the United States (Interview with George).

After many years and a lot of money spent sending their children to the United States for specialized education, these parents (including one of the founders) determined it was time to develop a learning difficulties focused school in Canada. The organization began by modeling itself after a similar institution in the US – CS's founding was based on imitation, not innovation (although they were the first major learning difficulties focused school in the Canadian market place). The organization evolved rapidly into a leader in their field.

As the Canada School grew, so too did their primary area of business. Originally founded on the premise of delivering a superior level of education to children with learning difficulties, CS soon began to offer primary and secondary education to children without learning difficulties, known as the Collegiate. As the organization continued to grow, and as CS established its self as a leader in education delivery for students with learning difficulties, the organization became highly sought after for consulting and speaking engagements. This offered the Canada School a third revenue stream. The constant growth and shifting of the business' focus led CS to adopt an ambidextrous orientation so that it could continue searching for additional sources of revenue.

The next section explores CS's shift towards an ambidextrous organization by tracing its historical development. The first part follows the transformation of the Canada School from a small institution geared specifically towards a single, niche market, to an organization focused on revolutionizing education as a whole. This analysis articulates the role that senior

leadership cognition and organizational history played in the firm's transformation process. This discussion is followed by an examination of the why the organization ultimately chose structural ambidexterity over contextual ambidexterity, and the implication each had on CS's ability to innovate.

4.1 An Ambidextrous Transformation – Stages of Growth

In 1981, the Canada School was founded for the purpose of delivering education to children with learning difficulties. At this time, there was no school like it in Western Canada (Interview with George). The beginnings of the school were fraught with uncertainty and change, which was an antecedent to the formation of ambidexterity by embedding in the senior leadership team a constant need to search for incremental and radical innovations. The evolution of CS can be described in five stages. The first two stages involve CS's inception and its bid for survival. These beginning stages were paramount to developing a certain cognition within the founding and senior leadership team, a cognition which ultimately led to the adoption of ambidexterity. The third stage was marked by rapid growth. Following a marked decision in Stage Two to remain open instead of shut down, CS made drastic moves to ensure its long term survival, including purchasing land, building their own structures, and taking on new revenue streams. In Stage Four CS realized that the market dynamics were beginning to undergo a radical shift, and so began to take drastic steps to keep ahead of the changes. This is when CS's first major organizational restructuring happens, most notably with the development of an R&D unit. At this stage, both exploration and exploitation research was conducted under one unit; at this stage, contextual ambidexterity in the R&D unit was practiced. After difficulties in Stage Four achieving the right balance of exploration and exploitation research, CS decided to separate these two units. This separation led to

increases in exploratory research. In Stage Five, CS established itself as a structurally ambidextrous organization.

In the first two stages CS's core business was delivering primary and secondary education to children with learning difficulties. In the third stage, the core business shifted to education of both children with and without learning difficulties, in addition to a new consulting revenue stream. In Stage Four, CS began to see itself as an education company, instead of a company that delivers three specific service lines. Finally, in the fifth stage CS once again re-positioned its core business to the delivery of learning – including education, consulting, and pre-packaged education programs to be sold to other organizations.

Throughout the stages, the transformation of CS's core business was accompanied by increasing levels of ambidexterity. As the organization moved away from its original core business, it continuously added staff members to ensure it had the appropriate knowledge required to grow (i.e.: exploration) and to drive incremental improvements to its current offering (i.e.: exploitation). The organization's current situation was path dependent and a direct result of its evolution (See Figure 4).

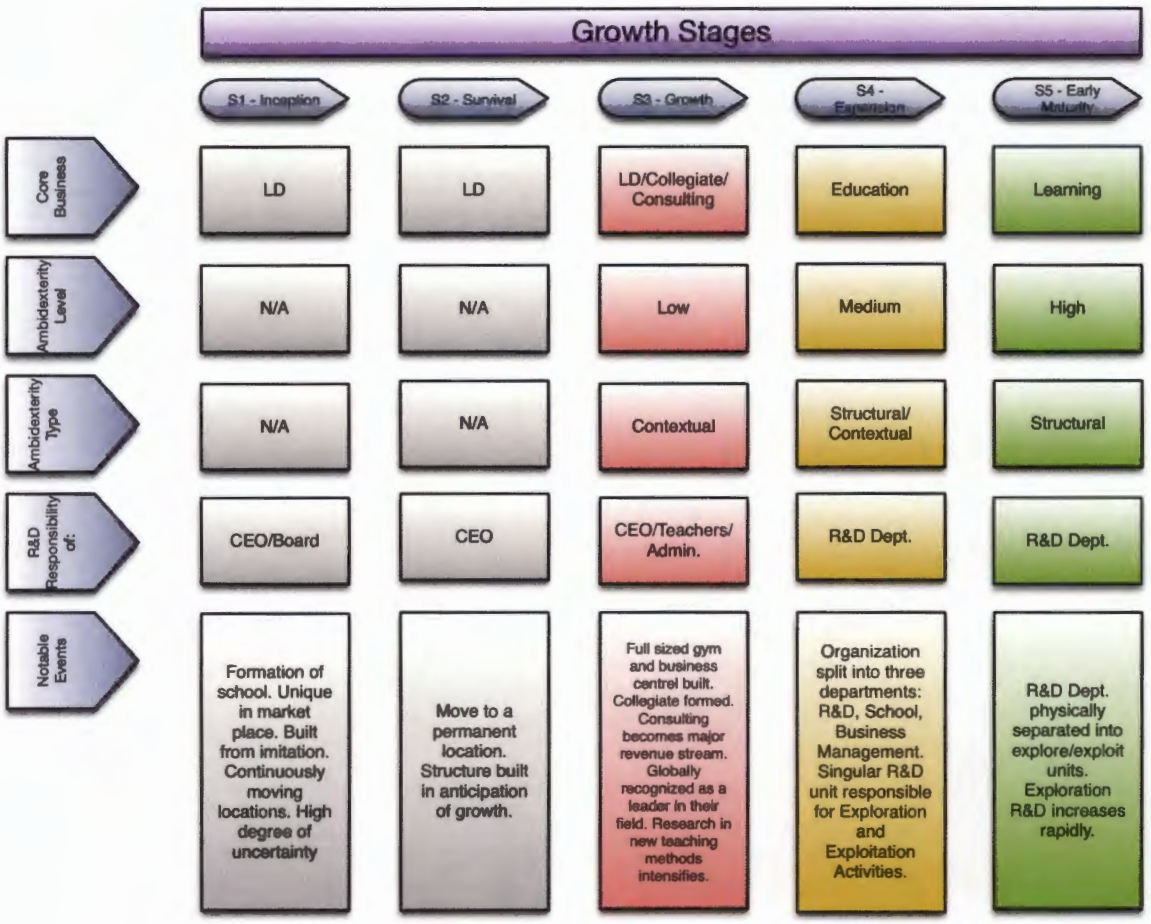

FIGURE 4: CANADA SCHOOL GROWTH STAGES

Figure 4 indicates the stages of growth. The left-most column represents the key indicators of organizational transformation: Core Business, Ambidexterity Level, Ambidexterity Type, R&D Responsibility, and Notable Events. The grey columns indicate an inexistent level of ambidexterity; the red column indicates a low to medium level of ambidexterity; The yellow column indicates a medium level of ambidexterity; the green column indicates high levels of ambidexterity.

What follows is an in depth discussion of the stages, which maps out senior leadership cognition and organizational history as key drivers to CS's adoption of organizational ambidexterity.

4.1.1 Stage One - Inception

Stage One, Inception, is characterized by the founding of the Canada School. At this time, there was no viable option for parents of children with learning difficulties (Interview with George). There was some attempt by the local school boards to administer this type of specialized education, but it was woefully inadequate (Interview with George). Alternatively, parents could send their children to a school in the United States that specialized in this type of education, but this was a very expensive option and not available to most middle class families (Interview with George; Interview with Jerry). Thus, the founders determined that it was time Canada had a school for children with learning difficulties. The fact that one of the founding members had a child who suffered from learning difficulties further added to the motivation to start the school.

In order to do develop this new school effectively, the founders realized that instructors needed to be trained and coached in new ways of teaching. This trigger was the first instance in which CS and its founders became actively involved in pursuing outside knowledge. The original school was modelled from the State School of Colorado[1] (SSC) in the United States (Interview with George; Interview with Diane). This was the first time that CS used inter-organizational relationships specifically for the purpose of bringing new knowledge into the firm.

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[1] Pseudonym

As Diane, a current manager and founding employee explained,

> "…we started that school and we were all hired. The staff from [SSC] came up to [CS] for the whole month of August before we started and trained us every day, 9-5, for a month. And then they stayed with us for the first month or six weeks. Watched us, observed us, gave us feedback. So it's modelled after the Colorado School, academically." (Diane)

At its founding, CS was an ambitious start-up organization, craving knowledge, and doing anything that it could to survive and best serve its students' needs. This was a key driver in developing the foundation for developing specific management cognition frames that translated their organizational strategy into a focus on organizational ambidexterity.

CS was receptive to new knowledge. Its founding was also characterized by uncertainty: the school was forced to rent space from provincially-run schools, and it was never clear how long the school would remain in any one particular location.

> "And when I came, you know, we rented space, we had about 5000 square feet. We've now 110 thousand square feet. When I came, we didn't own anything. Every single thing we had in the facility had been donated. The tables, the chairs etc. etc. So we went from having a balance sheet worth zip to a balance sheet that's worth 40 million dollars." (Jerry)

Diane corroborates Jerry's experience in the early days of the organization.

> "…for the first five years…every time they [the provincial school board] wanted a school they kicked us out and we had to rent another place. In the first seven years, I think we moved five times. So, we were part time movers as well, so we'd pack up the school and move it." (Diane)

This stage was also marked by the oil crash of the 1990s, during which time the school almost went bankrupt. It was a period during which the school lost over 100 students and almost closed. The school was saved by employees' willingness to accept reduced wages and benefits.

> "...we lost, very rapidly, about a hundred students, hundred and fifty students - we came very close to closing. And so the board...got together... and they gave us a choice at that point: we can close the school or you can take a pay cut and forgo RRSP contributions, no benefits, no nothing, for a year or two, and we can keep the school open if you guys give all that up. And so we voted collectively to give all that up, to keep the school going." (Diane)

The significance of this event is that it solidified employee commitment to the organization and laid the foundations of a shared value and belief system, which would later form the basis of contextual ambidexterity in the organization (i.e.: McCarthy & Gordon 2011). These shared beliefs and values enabled the Canada School to practice a loose form of contextual ambidexterity in its early growth stages, whereby all members of the organization continuously searched for ways to maintain the organization's survival and for ways to ensure growth. This sacrifice also solidified employee commitment to CS and was a key antecedent to future organizational developments that influenced how the major challenges it faced when adopting a structural ambidextrous orientation were addressed. In addition, it enabled CS to continue in its evolution through facilitating growth, change, and improvements. Stage One was marked by high degrees of uncertainty. As such, most organizational efforts were geared towards survival. Any research and development performed during this period was the domain of the Board of Directors and the CEO (Interview with Jerry); organizational ambidexterity, per se, did not exist.

The activities in Stage One were geared specifically towards organizational survival. During inception, CS looked outside of its own knowledge base and created inter-organizational relationships to facilitate the development of the school. The decision made by the employees of CS to forgo certain benefits in order to keep the school open is a significant event in this stage as it laid the foundation of a shared value and belief system. The end of

this stage is characterized by an explicit decision to raise funds and find a permanent location (Interview with Louis). The decision not to close, but to pursue a high-growth strategy manifested itself in the construction plans. The Board of Directors and senior leaders planned the construction of a new permanent location based on the anticipation of growth, up to and including minor details like making sure pipes were constructed on the exterior walls to limit the cost of upgrades when they were required (Interview with Diane).

4.1.2 Stage Two – Survival

Due to the high degree of uncertainty during its initial inception, the Canada School was forced to make a decision of whether to stay open or to close. The decision to stay open is important in that it led CS down the path to ambidexterity. In Stage Two, survival was the main objective of the organization. The second growth stage marks a significant turning point in CS's history. For the first time, the organization had its own, permanent location. The organization's previous history had a direct effect on the construction of the new building. Not only did they physically construct the building in such a way that future upgrades could be made with minimal disruption and maximum ease, the Board also considered future growth when deciding on the location and land acquisition. When the Board was deciding on the location for the school, they chose one in an area that was poised for future development.

> "[The land] was really cheap back then; now we couldn't afford it. Think about the vision, and the expanded view of: ok, let's not confine it to the city, let's look outside the city. And they also looked at, in twenty years from now, what is going to happen… they actually got a hold of the plans twenty years down the road [of] the possibility of what this [area] would look like." (Diane)

Securing a permanent location that was picked specifically for its long-term potential, in addition to planning the construction of the physical building for the same purpose, indicates

a shift in management cognition from uncertainty to a focus on survival and growth, which is aptly stated by the decision to "go out, raise the funds, and start the school" (Interview with Louis). This is a very different form of management cognition than the one that senior leaders had during the inception stage, in which they moved locations five times in ten years and were largely on year-by-year leases (Interview with Louis).

Fundamentally, the survival stage is a transition period of management's cognitive understanding of their business and market. Securing the new location, and doing so in a way that anticipated growth, served to signal to the staff that the senior leadership team was committed to the organization's values and beliefs just as staff members who had sacrificed their compensation and benefits were.

> "...by anticipating this growth, the message that they always send to us is... we have faith that things are going to do well. So, that was always the constant message. It's never stagnant, but the faith... and the support that the staff needed to go forward - they always give us that message, either overtly or by their actions." (Diane)

The development of the required knowledge base for contextual ambidexterity was rooted in the actions and outcomes of both Stage One and Stage Two. This knowledge base was a result of the shared value and belief system brought about by the decision of employees to take a cut in compensation benefits in order to ensure the survival of the organization. Additionally, senior leaders' explicit decisions centred on choosing a permanent location and developing specific building plans helped reinforce this by signalling to employees that they internalized these same values and beliefs. This commitment to survival led the Canada School to pursue additional revenue-generating activities, including delivering education to children without learning difficulties and using the knowledge they had acquired and

developed to initiate a consulting revenue stream, which marked the beginning of Stage Three – growth.

4.1.3 Stage Three – Growth

Stage Three is characterized by rapid growth, both in terms of the school's physical size and the addition of new revenue streams. This led to a fundamental shift in employee duties (specifically for the teachers), resulting in capacity restraints. Specifically, three major events happened in the growth stage. The first was the construction of a new full-sized gym and separate business centre/administrative building. The second was the organization's expansion into teaching children without learning difficulties (the Collegiate program), and the third was the addition of a new revenue stream from consulting services. On top of these three changes, senior leaders also sensed that major market shifts were about to happen (Interview with Jerry).

During this stage, the teachers were tasked with both teaching full time, looking for exploitation research opportunities, speaking at conferences, and participating in consulting activities (Interview with Elaine). "We had a few folks who would just come up with ideas, you know, from four o'clock to ten o'clock at night" (Interview with Elaine). Stretching the teacher's time like this was not sustainable. It eventually reached a point where the teachers were unable to teach full time, travel around North America speaking at conferences, managing administrative tasks and while ensuring that the core service of delivering education to children was performed at the required quality level (Interview with Diane). Additionally, CS's current customers were looking for something more. When children with learning difficulties were remediated to the level of their peers who did not have learning difficulties, the next step was usually to enroll these children in a traditional school. The

parents of these children, however, wanted them to continue on in CS and not be transferred to a provincially run school or another private institution. Consequently, CS developed the Collegiate program for children without learning difficulties and for those who had been successfully remediated. The Collegiate represented an extension of their current service offerings. This exploitation activity was largely directed by the CEO and Board members (Interview with Jerry).

> "The way I describe the collegiate program is: if you go to the [learning difficulties school], there's four goals: We'll remediate your kid's academic skill deficits; we'll teach you transferable skills; we'll build your self-esteem and self-confidence; and we'll build your pro-social capacity. So that's what I call vanilla - they want that because those are the things that their kids struggle with. So you get the gaps remediated, well what's next? Now they're looking for a scoop of chocolate. What are the learning experiences and activities that are going to enhance or advantage my kids? You know, how are you going to make them grow? That's where the Collegiate program came in." (Jerry)

In addition to a new service offering that complemented their existing business, new revenue streams started to appear, including consulting and the sale of "micro units." The micro-units were brought about initially through exploratory searches, most of which were initiated by the CEO and Board, and delivered by staff members from all levels of the organization (Interview with Bob). The growth of these other revenue streams forced the company to search for new ways to structure the organization to ensure CS's primary service offering – delivering education to children with and without learning difficulties would not be disrupted (Diane). Importantly, these new revenue streams, particularly consulting opportunities, offered extremely profitable opportunities.

> "...we did a lot of international consulting - I can only tell you... we're very expensive if you hire us. But since our wages were fully funded by the school, we could be doing a million dollars a year in consulting, and it all came to the school, so we didn't get

> paid a nickel more. So the school would look at that as an additional revenue source, and they were able to accumulate 12 million dollars over 10 years, so it was a pretty lucrative consulting business." (Jerry)

In addition to consulting opportunities, the Canada School saw an opportunity do develop "micro-units" based on the school's own teaching curriculums, which could be sold to other institutions (Jerry). The idea behind these micro-units was to also sell them to home-school facilitators and other education organizations. During this stage, however, CS did not have the capacity to invest in researching, developing, and marketing these units (Interview with Bob). The expansion into other program areas occurred at the same time as the construction of two new buildings: a full sized gym and a business centre. The gym signified a major step as it enabled the collegiate to compete with other institutions in terms of extra-curricular activities (Interview with Diane).

The environment in which CS operated was changing rapidly and incremental innovations were no longer enough. Historically, changes in the market in which CS operated had been incremental, such as discovering better teaching or delivery methods (Interview with Jerry). During Stage Three, the Canada School sensed that the market was beginning to change radically, which was in large part due to new technologies (Interview with Jerry). In order to stay ahead of these radical changes and "to be able to keep pace," CS needed "to put into place the structures" necessary to enable both exploitation and exploration (Interview with Jerry).

Stage Three was marked by expansion in their traditional business, searching for new revenue streams, and a rapidly shifting market environment. As new revenue streams presented themselves and were sought out, the capacity for employees to develop them in addition to performing their original duties to a satisfactory level quickly became unrealistic.

Coupled with a rapidly shifting market environment, CS had to make explicit choices about how it could maintain competitive advantage by continuing to participate in both exploration and exploitation research. The organization practiced what could best be described as contextual ambidexterity, with a focus on exploitation. Teachers were primarily tasked with searching for improved ways of delivering education.

During this stage, confusion began to mount over what exactly the core business of CS truly was; the core business was loosely defined as the Collegiate, education for children with learning difficulties, and consulting. Employees were tasked with doing everything from researching improved ways to deliver education to students of all needs through to delivering consulting engagements and speaking at international conferences. Layered on top of all this activity was senior leadership's sense that the market environment was about to enter a stage of radical transformation. Although the CEO and Board was looking at exploratory opportunities like micro-units and using new technologies, it quickly became infeasible to conduct this type of research in addition to taking on an increasingly larger administrative function (Interview with Diane). It was impossible to do everything and thus something had to give. Stage Three ends with the realization that the current organizational structure was not conducive to the growth that had just occurred, nor for the direction in which CS wanted to go.

To overcome these challenges, the senior leadership team at the Canada School decided to restructure the organization into three parts – teaching, administration, and R&D. The teaching department was tasked with teaching children with learning difficulties and those in the Collegiate. The R&D unit's mandate was to pursue both exploration and exploitation activities simultaneously; it was set up to run as a version of simultaneous contextual

ambidexterity (i.e.: Gibson & Birkinshaw 2004; Im & Rai 2013; McCarthy & Gordon 2011). The administration unit was tasked with managing the overall business and commercializing, where practical, the research that came out of the R&D unit. Signalling a transition from Stage Three to Stage Four, CS actively began to search out new knowledge in the form of new employees in hopes of contributing to exploratory research initiatives (Interview with Jerry). Additionally, inter-organizational relationships were pursued more aggressively, specifically for exploitation research initiatives. Although these changes were well intentioned, CS quickly ran into trouble, specifically with how the new R&D unit was performing; this trouble was a direct consequence of the Canada School's historical development.

4.1.4 Stage Four – Expansion

Stage Four was comprised of rapid change and expansion of the core business. CS started growing very quickly, new revenue streams were presenting themselves, and the education environment as a whole was shifting rapidly. To address these challenges, the Canada School developed an organizational model that represented a shift towards contextual ambidexterity. Importantly, it was senior leadership's understanding (management cognition) that change was about to take place in the industry that allowed CS to mobilise resources and stay ahead of impending changes. While CS excelled at exploitation, their exploration research levels were facing difficulties. As Stage Five demonstrates, more structural changes were needed to effectively balance exploration and exploitation activities.

Stage Four is marked by a fundamental shift in CS's core business. In this stage, the Canada School underwent a major structure change, which moved the firm from a low/medium level

of ambidexterity into a medium/high level. Although the organization was split into three departments at this stage, there were still some issues with OA at the Canada School.

During this period CS wanted to expand their business beyond the three cores of learning difficulties, Collegiate, and consulting (Interview with Bob). In order to do this, the core of the business had to evolve into one of education, and each of the different revenue streams would reside under the education business banner. In addition, the search for new revenue-generating activities and improvements to current activities were both immediate goals. With this change in the core business model, a structural reconfiguration was necessary.

Part of the exploratory research involved designing a completely different education delivery system, or "21st Century Learning," that would allow students flexibility in schedules and the ability to complete entire grades in shorter amounts of time (Interview with Jerry). For this project to get the attention it required, a unit had to be set up that would enable researchers to focus solely on work related to 21st Century Learning (Interview with Jerry). "You couldn't do [this] if you've got one foot in the classroom and one foot trying to keep pace" (Interview with Jerry). Thus, one of the fundamental drivers of the organizational reconfiguration was to ensure that the Canada School would be able to keep pace with this "exponential revolution," and to maintain its place as leaders in education (Interview with Jerry).

Consequently, the organization separated into three distinct units: R&D, Schooling (learning difficulties, Collegiate), and a business unit, the latter of which was to assist with the capitalization of the research done in the R&D unit.

> "...in order to do that we need marketing people, communications people, resource development people, business planning people, etc. etc. So...we gotta [*sic*] put a team together to take on those tasks." (Jerry, CEO)

The fundamental change in Stage Four was driven by the organization's ability to sense the shifting education landscape. The pace of change, both radical and incremental, began to accelerate as Stage Three moved into Stage Four (Interview with Jerry). CS did not want to be "hostage to this change," and decisions were made to get in front of it and capitalize on the change where it could: "if we're hostage to the change then it will change us – we want to change ourselves," (Interview with George). This supports the understanding that senior leadership cognition is tantamount to an organization's ability to innovate and change (i.e.: Tripsas & Gavetti 2000; O'Reilly & Tushman 2013).

Historically, shifts in the education landscape were due to technological advances (Interview with Jerry). The first major technological advance in education came from the development of Microsoft and Microsoft Office, which provided increases in efficiency and effectiveness (Interview with Jerry). This drastically altered the in which students were taught, primarily due to the increased efficiency of being able to edit documents, both for teacher and student (Interview with Jerry). The Internet was the next major change in education, as it began to alter the teacher's role from "sage on the stage" to collaborator and facilitator. This required a shift in the way education was delivered and the development of a different types of teaching skillsets (Interview with Jerry). As these changes happened over the first three stages of CS's existence, they were relatively slower-moving and were thus accompanied by relatively slower adoption rates (Interview with Jerry). In Stage Four, technological advances began to appear more rapidly, which again required the development of new teaching skillsets (Interview with Jerry). This time, however, CS needed to develop these skillsets quickly due to the increased rate of change, requiring CS to search for better ways

of delivering their current service; in other words, CS needed to constantly pursue exploitation initiatives.

To address the rapidly changing environment that accompanied both incremental (i.e.: different teaching styles, development of "micro-units") and radical (i.e.: 21st Century Learning) innovations, an R&D unit was established. At first, both exploratory research and exploitative research was done in the same R&D unit. Most of the research conducted, however, benefited the schooling unit of CS (i.e.: exploitation) and, although exploratory research was pursued, progress was slow (Interview with Bob). Ambidexterity at Stage Four can best be described as attempted simultaneous contextual ambidexterity, whereby exploration and exploitation were attempted in the same unit at the same time.

The word 'attempted' is used purposefully here. Recall that prior to the formation of the R&D unit, research responsibility was spread across the organization, and that this was possible because of a shared value and belief system – based on a shared history – of those within the firm. These conditions were ripe for a contextual ambidextrous organization. When the R&D unit was created, however, it separated those working in the unit from the organization as a whole; the mandate for these workers changed. Thus, the shared vision of all employees in the organization ceased to exist and was replaced by two different mindsets – one based on incremental innovations and one based on and radical innovations.

Exploitation goals in the R&D unit were the same as they had always been: to benefit the historical core of the business – schooling. By moving former teachers into research positions, the shared values and beliefs that had been a part of CS from stages one through three were transferred into the R&D unit. The challenge arose when a different mandate was given to the exploration team within the same R&D unit; within the R&D unit the vision for

research was very different between those researchers responsible for exploitation (research in better teaching methods and micro-units) and those for exploration (research in 21st Century Learning). Specifically, exploration research activities did not have to have any impact on the current operation of the school (Interview with Joe). This is typically the primary goal of exploratory research – that exploration is fundamentally geared towards finding radical innovations that destroy current capabilities, create new ones, and allow an organization to enter brand new markets (March 1991). As March (1991) argues, however, when given the choice, most organizations pursue exploitation because the results are more certain, appear faster, and pose less of a risk. Having these two different value and belief systems in one unit – one based on bettering the current service offering and one tasked with finding brand new revenue-generating activities – was problematic as it led to a fundamental difference in vision between the two groups of researchers situated in the same organizational unit (March 1991; O'Reilly & Tushman 2008). At the Canada School, the research conducted at this time in the R&D unit migrated towards an emphasis on exploitation; exploratory research was not progressing at a satisfactory level (Interview with Joe). Trying to run a contextual ambidextrous R&D unit, focused on simultaneously pursuing exploitation and exploration, was not working.

To aid in the development of exploratory research, the Canada School hired outside employees into the R&D unit (Interview with Elaine). This was done specifically to bring new knowledge into the research process, so that exploration activities would not "just reinvent another [Canada School]" (interview with Elaine). "We needed some people from the outside, we needed some people from the inside [be]cause we needed new blood and new ideas" (Interview with Elaine). Utilizing new knowledge gained through new employees in a

contextual ambidextrous R&D facility is a difficult task, primarily because the basis of contextual ambidexterity is adherence to a shared value and belief system. These difficulties manifested themselves in CS's R&D unit quite quickly, resulting in the newly hired employees leaving. The reason these new employees left is indicative of the challenges of trying to pursue exploration and exploitation activities simultaneously in a contextual ambidextrous R&D unit – namely that those with new knowledge were expected to internalize the value and belief system present in the R&D organization, which was focused more on exploitation research than exploration research.

> "What has since happened is, through attrition, through lack of fit, through lack of differences in cultural understandings, I think we only have one person now in [the R&D unit] who isn't a [Canada School] – hasn't been a [Canada School] teacher and moved across. So, I think that's interesting. So whether or not we were insufficiently welcoming of new ideas or different ideas, or whether people internally have a lot more capacity than we were giving them credit for… I think is pause for reflection, because the quality of work that has been done has been very positive." (Elaine)

However well intentioned the hiring of new employees was, it did not work out as planned. Eventually, and rather quickly, the new hires became subject to attrition. This was a case of hiring the wrong people and requiring them to adhere to the same value and belief system present in the R&D unit, which was primarily geared towards exploitation. Indications of mis-hiring are evident in the way that the new hires were unable to actually add any new knowledge to the teams:

> You know, at first it was a huge barrier, because we wanted to go 50/50. And then we brought in these people from the outside – we didn't find, other some specific knowledge – like the person who has the… doctorate in assessment – that they had some unique knowledge we didn't. But I was kind of – you know, you always like to think that the guy from next door, or half-way around town knows more than you do.

> They didn't dramatically increase our knowledge base, which I was [actually] taken aback by… So that was a bit of a surprise." [Jerry, CEO]

The only new employee that remained in the R&D unit had specific knowledge that the rest of the team did not – the PhD in assessment. In the next stage, when the R&D unit was structurally separated, this employee was moved into the exploration unit.

To further aid in research activities, inter-organizational relationships were actively pursued by the Canada School, including with universities, suppliers, and the community. This was only done in some instances, however, and most notably with exploitation research.

> "…we've had a relationship, at least with the University of Calgary particularly, around some of the department Deans, so, you know, work a lot with the dean of educational psychology over there. We've worked with one of the Deans with, at least in the mathematical department over there as well. And they're as interested in some of the stuff we're doing because it informs their research on how to actually deal with kids that have pretty unique learning requirements, right. So it's sort of a symbiotic relationships." (Norman)

For the exploitation unit, inter-organizational relationships were actively encouraged, pursued and targeted. This is true not just with higher educational institutions, but with partners throughout the value chain. For example, the exploitation researchers worked with the education software supplier that CS used to deliver math programs in order to customize software for specific purposes. The way the software was customized came out of research that the exploitation unit did in collaboration with the supplier (Interview with Jerry). When relationships with suppliers do not yield the required results, and when universities were not interested in a particular project, the exploitation team looked to the community to bring new knowledge into the organization (Interview with Jerry). For example, a Post-Doctoral student in assessment was brought on board to work on new ways of assessing student learning (Interview with Jerry).

Within the exploitation unit, inter-organizational relationships were widely used and helped contributed to research output. This is in sharp contrast from the way inter-organizational relationships were approached with the exploration unit working on the 21st Century Learning research. The same level and use of inter-organizational relationships were actively discouraged for the exploratory team (Interview with Joe). When researching 21st Century Learning, the exploration unit referenced and investigated various third party information sources, but the use of formal inter-organizational relationships was not taking place (Interview with Jerry). Avoiding the use of inter-organizational relationships for exploration research seems to have been due to a concern for protecting the competitive advantage contained in their knowledge and IP; CS did not want any of their ideas or intellectual property falling into others' hands (Interview with Jerry).

Expansion in Stage Four was characterized by the change in CS's core business to education, a movement of ambidexterity levels from low to medium, and the formation of the R&D unit. The formation of the R&D unit was meant to speed up both exploration and exploitation research, as senior leaders sensed that major changes were on the horizon. This newly formed unit, however, quickly ran into difficulties; attempting to simultaneously pursue exploration and exploitation activities under a contextual ambidextrous R&D unit resulted in a disproportionate focus on exploitation activities. This was a result of the initial employee makeup of the R&D unit: in the beginning, the R&D unit was made up of employees taken directly from the current staff, most of which had been with the organization starting in at least Stage Two. CS attempted to balance the knowledge levels within the R&D unit by hiring outside employees to assist with exploratory research. This,

however, failed and ultimately resulted in attrition of all but one of the newly hired employees.

Exiting the expansion stage, CS took corrective action to ensure that both exploration and exploitation activities were pursued with equal vigor and attention. To do this, the R&D unit was physically separated into an exploration unit and an exploitation unit. The staff in each unit worked in different locations and began to develop their own value and belief systems, including different working relationships and styles. This resulted in an increase in exploration research output and a shift towards the stability of early maturity.

4.1.5 Stage Five – Early Maturity

Following the difficulties brought about by trying to simultaneously pursue exploration and exploitation in the same R&D unit, CS made additional changes to its organizational structure. It was difficult to balance the exploration and exploitation activities under the same R&D unit, so the organization decided to physically separate the exploration team and the exploitation team (Interview with Jerry). Stage Five is characterized by CS entering into a state of maturity as it pursued structural ambidexterity. The shift was seen as necessary in order to expedite exploration activity, specifically around research on 21st Century Learning (Interview with Jerry). This change enabled the exploration team to work faster and more efficiently, largely due to the team's isolation from other areas of the business (Interview with Joe). This is especially true in the team's ability to meet and discuss ideas amongst themselves, which was very difficult to do under a contextual ambidextrous R&D environment of the previous stages (Interview with Joe).

Stage Five began with the realization of the difficulty in trying to simultaneously pursue exploration and exploitation activities in the same organizational unit, and ended with

another organizational shift, this time to structural ambidexterity. At the time this research was conducted, this shift had just recently occurred. The results thus far have been positive, with increased exploratory activity noted by the researchers.

The Canada School went through five distinct stages of growth on its way to becoming a structurally ambidextrous organization. The first two stages were characterized by CS's inception and explicit decision to survive in the face of extinction. These first two stages created a shared sense of values and beliefs that stayed with the organization into Stage Five. In Stage Three, growth was pursued vigorously, which resulted in new revenue streams. Ultimately, Stage Three sets the Canada School in a state of transition; the organization grew rapidly to a point where the original structures no longer suited the shifting core business. Upon sensing that change in the education field was about to drastically pick up pace both in terms of incremental changes to the current business and radical changes to the education industry, senior leaders at CS realized they needed to change the organizational structure. Stage Four represented an initial attempt at positioning the organization to pursue both exploration and exploitation. When a balance between the two became unachievable within one R&D unit, the exploration and exploitation teams were structurally separated. This separation led CS into the fifth stage of growth, where the firm currently sat at the termination of fieldwork.

5 Discussion

What emerges from the data is a clear indication that an organization's history plays an important role in the development of ambidexterity. In the case of CS, the organization's historical development enabled it to search continuously for new knowledge and

opportunities, seize new opportunities, and reconfigure assets for growth. This ability to sense, seize, and reconfigure for change is what Teece et. al. refer to as dynamic capabilities. This study supports the finding of Zollo & Winter 2002 that dynamic capabilities form over time and through the experience of performing certain tasks and learning activities. This study also supports the findings of O'Reilly & Tushman (2008), that the development of organizational ambidexterity is a function of these dynamic capabilities. By knowing that CS had to continuously search for new ways of doing things, the senior leadership team searched for an effective way to make both incremental improvements to its current service offerings and at the same time search for radical new innovations.

In the case of the Canada School, ambidexterity and the constant search for innovation developed because of the organization's early history of uncertainty and constant change. A growth mentality developed out of the explicit decision in Stage Two to continue operating in the face of permanent closure. This mentality – this shared vision and values – was cemented in both the employees and the senior leaders; the former through the process of giving up certain compensation benefits and the latter through explicit choices made in the purchase and construction of a permanent location.

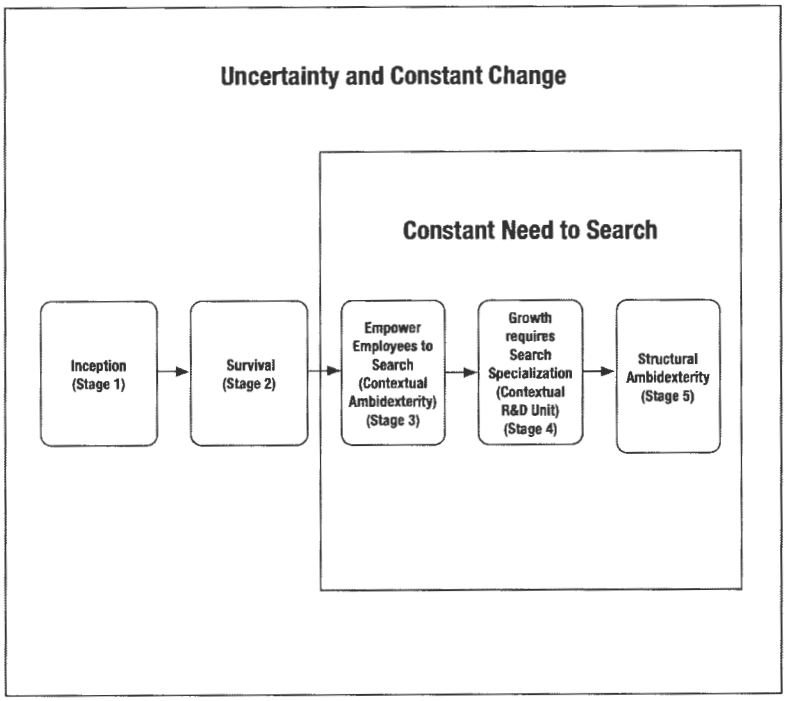

FIGURE 5: DEVELOPMENT OF ORGANIZATIONAL AMBIDEXTERITY AT THE CANADA SCHOOL

The diagram above illustrates the evolution of organizational ambidexterity at the Canada School. CS was founded on a base layer of uncertainty and change. Actions taken in Stages One and Two, such as the employees giving up certain benefits and the decisions made around securing a permanent location, were made solely with firm survival in mind. As the situation began to settle at the end of Stage Two, the transition to Stage Three was accompanied by a constant need to search for new growth opportunities. In Stage Four, when changes to the market environment began to increase rapidly, specialized search functions were developed, which led to the creation of the R&D unit. In Stage Four, contextual ambidexterity was initiated in the R&D unit and, when this did not operate as planned, CS once again reorganized itself, this time to adopt structural ambidexterity.

The development of the R&D facility led to two things. First, it signaled that the organization was focused on continued growth. Second, it disrupted the current organizational context by pulling out former employees (i.e.: former teachers and administrators) to perform specialized research functions. When this happened, the contextual environment created by CS's past history, as discussed in Stage Three, ceased to function; employees in the schooling unit now only focused on service delivery, not on improvement. Although there are isolated incidences where the schooling unit did request specific research from the R&D department, by and large it was the R&D department that was the locus of research activity (Interview with Elaine).

5.1 Knowledge Management at the Canada School

Under contextual ambidexterity in the R&D unit, the Canada School faced difficulties in balancing the exploration and exploitation functions. The reasons for this can be traced to CS's initial beginnings – back to its first two stages of growth. First, the evidence shows that contextual ambidexterity, pre-Stage Four, was not conducive to the development of radical innovations. Until the end of Stage Three, CS was concerned primarily with its own survival by developing better and more efficient ways to deliver its core services – education to children with learning difficulties and, later, to children in the Collegiate; prior to Stage Four, the shared vision and values that had been formed and instilled into the organization was that of survival. It was only at the end of Stage Three, when senior leaders of the Canada School sensed that the pace of change was increasing rapidly, that a new organizational structure was needed in order to keep abreast of this change.

It is during Stage Four in CS's development where questions about the efficacy of contextual versus structural ambidexterity can be raised. An important finding of this research is that in

order for contextual ambidexterity to work, those involved in ideation and research must all be working towards the same end. That is, under a contextual ambidextrous structure, exploration and exploitation cannot be undertaken simultaneously. This finding supports the findings of other researchers in that contextual ambidextrous firms will yield the greatest results when exploration and exploitation are pursued sequentially, and not concurrently (i.e.: Adler et al. 1999; Brown & Eisenhardt 1997). Yet when ambidexterity is approached in this way, by essentially switching back and forth between exploration and exploitation, it begs the question of whether this is can even be called ambidexterity. Going through periods of incremental improvements, and then suddenly switching to the search for radical innovations, is more akin to a punctuated equilibrium view of change, which posits that organizations are generally in a state of inertial equilibrium that is then disrupted by periods of rapid change (O'Reilly & Tushman 2013; Gersick 1991). This approach to change was not conducive to the environment in which the Canada School operated because of the rapid changes in both the CS's current service offerings (i.e.: exploitation) and also in the education market as a whole (i.e.: exploration). Therefore, another important finding of this research is that if an organization operates in an environment undergoing rapid change, whereby the organization needs to focus on incremental innovations and radical innovations at the same time, structural ambidexterity is superior to contextual ambidexterity.

In Stage Four, when CS brought in new employees to the R&D unit in order to stimulate exploratory research, the end result was that most of these new employees ended up leaving. This was due to a lack of fit and an inability to adapt to CS's organizational culture (Interview with Elaine). This confirms March's (1991) theory that knowledge in ambidextrous organizations must be handled separately, by physically separating the

exploration and exploitation units. By forcing new employees to internalize pre-existing values and beliefs, CS stifled these new employees and lost access to their prior knowledge.

When the units separated, the exploration unit was able to distance itself from those researchers focused on bettering the current service offerings. Adherence to a common value and belief system in the R&D department was broken and a new system of beliefs and values were created (specifically around the exploration unit's mandate that their research did not have to benefit the CS's current revenue-generating activities). Exploratory research activity then increased dramatically.

6 Conclusion: Contextual or Structural Ambidexterity?

Following the Canada School through its five stages of growth, ambidexterity first appears in Stage Three. At this point, almost everybody in the organization was responsible for developing incremental changes and radical innovations, although most focus was on the incremental (exploitation) changes. In Stage Four there is an explicit decision to confine research and development into one unit, and within that unit the researchers were responsible for both incremental innovations (i.e.: new teaching styles, developing micro-units) and radical innovations (i.e.: 21st Century Learning). During Stage Four, the Canada School practiced contextual ambidexterity within its R&D unit. This structure only partially worked, as most activity within the unit tended towards exploitation.

When trying to determine which version of ambidexterity is more effective, the first things to consider are the goals of the organization and the rate of change associated to the organization's market environment. If change is affecting an organization's current revenue-generating activity, as well as affecting the overall market environment in a way that could

lead to redundancies in the current strategy, then structural ambidexterity is required. This will enable the origination to pursue both incremental innovations and radical innovations concurrently. Conversely, if an organization is only focused on creating revolutionary innovations in its market space, then contextual ambidexterity, practiced sequentially, will suffice. This is especially true in R&D organizations in the pharmaceutical industry, for example (McCarthy & Gordon 2011).

Thus, contextual ambidexterity is not the proper choice in organizational structure when rapid market changes are occurring that affect both radical and incremental innovations. The case of the Canada School demonstrates that in order to effectively pursue exploration and exploitation simultaneously, the two units must be physically separated. In situations where only one type of innovation is pursued – radical or incremental – then contextual ambidexterity will suffice.

As demonstrated by this empirical study, structural ambidexterity is superior to contextual ambidexterity in situations of rapid change. When the Canada School first experimented with contextual ambidexterity in its R&D unit, the simultaneous pursuit of exploration and exploitation inevitably led researches to focus on exploitation. Thus, in order to create an effective balance between the two, CS structurally separated the R&D unit so that the exploration and exploitation units occupied separate, physical spaces. Consistent with March's (1991) findings, this allowed two fundamentally different sets of values and beliefs to be created. In the exploitation unit, the shared belief and value system was an artifact of the organization's history; the goal was to constantly improve the current service offering. In the exploration unit, a new system of values and beliefs appeared, specifically around the fact that what the exploration unit worked on did not have to benefit the current business

model in any way. In order for all of this to work successfully, however, required a senior leadership team that was open to change. This team developed the dynamic capabilities necessary for constant change over time and by becoming exposed to certain conditions and learning opportunities. Thus, senior leadership cognition is a necessary antecedent to effective ambidexterity.

7 Implications for Practitioners

This case study on the Canada School's progression towards structural ambidexterity provides several lessons that practitioners can use when attempting to develop both incremental and radical innovations. These lessons can be used in both for-profit and non-profit organizations. Specifically, structural ambidexterity is preferred under conditions of rapid change, leaders must build a change mindset into the organization, and inter-organizational relationships can be useful in developing new ideas.

If an organization is wishing to simultaneously pursue incremental and radical changes – exploitation and exploration – then it must develop a structural ambidextrous orientation. Contextual ambidexterity, under these conditions, will not suffice. As was the case with the Canada School, if the simultaneous pursuit of exploitation and exploration is attempted under a contextual ambidextrous R&D unit, finding a balance between the two will be very difficult. The likely result will be a skewing to one side or the other, depending on previous actions of the organization. For example, at the Canada School, uncertainty and constant change in the early stages of growth led to a determination of survival, and thus a shared value and belief system set on continuously improving CS's current service offerings. Thus, when a contextual ambidextrous R&D facility was formed, it tended to skew towards

exploitation. If, on the other hand, an organization does not have the capacity to operate two distinct units, then contextual ambidexterity can work, but only if exploitation and exploration are pursued sequentially and with the addition of inter-organizational relationships.

Organizational history is also important; if an organization wants to be on the forefront of change, a change mindset must be built into the organization as a whole. This is in large part attained by an organization's history. Thus, if an organization wants to be able to pursue constant change, then the leaders themselves have to build it into the organization. One way to do this is to construct a history, if not already present, of continuous change. Senior leaders can take on many small change projects, for example, and condition the organization to be fluid and open to changes; the more an organization changes, the more change will become embedded into that organization's core value and belief system.

Finally, organizations should not discount the power of inter-organizational relationships. CS used these relationships very well when it came to exploitation, and these relationships helped CS develop incremental innovations to its current service line. Likewise, these inter-organizational relationships can be used to speed up the exploration process.

8 Areas for Further Research

This case study presents a paradigm for understanding what antecedents are necessary to develop an ambidextrous organization. Fundamentally, senior leaders must attain a mindset towards constant change. This is most likely attained through an organization's historical development – in this case, the senior leaders at the Canada School developed this mindset because of the tenuous nature of their organization's beginning. There are two specific areas

revealed through this project that require further investigation. Inter-organizational relationships had a positive effect on CS's ability to create incremental innovations. One question that remains is whether or not inter-organizational relationships can act as a substitute for structural ambidexterity and vice-versa, similar to how Park et al. (2014) found that certain IT structures can act as a substitute for inter-organizational relationships in ambidextrous organizations. Inter-organizational relationships for both units had been commonplace since Stage Three, yet they were not used for exploratory research. In fact, inter-organizational relationships were actively discouraged for exploration research. This reveals some interesting questions: Was the low exploration research output, which occurred in Stage Four, a condition of structural versus contextual ambidexterity, or was it a condition of inter-organizational relationship usage? Furthermore, because exploration research effectiveness increased in Stage Five, is it possible that structural ambidexterity can off-set the effects of low inter-organizational relationship levels? This would be an interesting concept to pursue and would add value to both the theory and practice of ambidexterity.

A second and more fundamental area in need of further research is the issue of contextual ambidexterity as it relates to March's (1991) theory. If it is true that an organization needs two different types of employees – those who adhere to the code and those that resist it – in order to effectively manage exploration and exploitation, then there necessarily must be an issue with contextual ambidexterity. Contextual ambidexterity does not fit with March's theory as it posits that all employees in a research unit (or entire organization) must be governed by a shared belief and value system; everyone must adhere to March's code. The question must be raised, then, which one is correct? Is there something missing from March's theory, or is contextual ambidexterity simply not ambidexterity at all? Perhaps this

leads us to another question: what exactly does it mean posses "organizational ambidexterity?" The answer to these questions will contribute to our understanding of not only ambidexterity as a theory, but of effective innovation practices in general.

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